



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[EPA-HQ-OPP-2020-0297; FRL-10642-01-OCSP]

Various Fragrance Components in Pesticide Formulations; Tolerance Exemption

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes exemptions from the requirement of a tolerance for residues of various fragrance components listed in Unit II of this document when used as inert ingredients in antimicrobial pesticide formulations applied to food-contact surfaces in public eating places, dairy-processing equipment, and food-processing equipment and utensils when the end-use concentration does not exceed 100 parts per million (ppm). Innovative Reform Group, on behalf of The Clorox Company, submitted a petition to EPA under the Federal Food, Drug, and Cosmetic Act (FFDCA), requesting establishment of exemptions from the requirement of a tolerance. This regulation eliminates the need to establish a maximum permissible level for residues of these various fragrance components, when used in accordance with the terms of the exemptions.

DATES: This regulation is effective [INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. Objections and requests for hearings must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*] and must be filed in accordance with the instructions provided in 40 CFR part 178 (see also Unit I.C. of the **SUPPLEMENTARY INFORMATION**).

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA-HQ-OPP-2020-0297, is available at <https://www.regulations.gov> or at the Office of Pesticide Programs Regulatory Public Docket (OPP Docket) in the Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution

Ave., NW., Washington, DC 20460-0001. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room and the OPP docket is (202) 566-1744. For the latest status information on EPA/DC services, docket access, visit <https://www.epa.gov/dockets>.

FOR FURTHER INFORMATION CONTACT: Daniel Rosenblatt, Registration Division (7505T), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460-0001; main telephone number: (202) 566-2875; email address: RDfRNotices@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Crop production (NAICS code 111).
- Animal production (NAICS code 112).
- Food manufacturing (NAICS code 311).
- Pesticide manufacturing (NAICS code 32532).

B. How can I get electronic access to other related information?

You may access a frequently updated electronic version of 40 CFR part 180 through the Office of the Federal Register's e-CFR site at <https://www.ecfr.gov/current/title-40>.

C. How can I file an objection or hearing request?

Under FFDCA section 408(g), 21 U.S.C. 346a(g), any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. You must file

your objection or request a hearing on this regulation in accordance with the instructions provided in 40 CFR part 178. To ensure proper receipt by EPA, you must identify docket ID number EPA-HQ-OPP-2020-0297 in the subject line on the first page of your submission. All objections and requests for a hearing must be in writing and must be received by the Hearing Clerk on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. Addresses for mail and hand delivery of objections and hearing requests are provided in 40 CFR 178.25(b).

In addition to filing an objection or hearing request with the Hearing Clerk as described in 40 CFR part 178, please submit a copy of the filing (excluding any Confidential Business Information (CBI)) for inclusion in the public docket. Information not marked confidential pursuant to 40 CFR part 2 may be disclosed publicly by EPA without prior notice. Submit the non-CBI copy of your objection or hearing request, identified by docket ID number EPA-HQ-OPP-2020-0297, by one of the following methods:

- *Federal eRulemaking Portal*: <https://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be CBI or other information whose disclosure is restricted by statute.

- *Mail*: OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001.

- *Hand Delivery*: To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at <https://www.epa.gov/dockets/where-send-comments-epa-dockets>.

Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at <https://www.epa.gov/dockets>.

II. Petition for Exemption

In the *Federal Register* of June 24, 2020 (85 FR 37806) (FRL-10010-82), EPA issued a document pursuant to FFDCA section 408, 21 U.S.C. 346a, announcing the filing of a pesticide

petition (PP IN-11372) by Innovative Reform Group on behalf of The Clorox Company, 4900 Johnson Dr., Pleasanton, CA 94588. The petition requested that 40 CFR 180.940(a) be amended by establishing exemptions from the requirement of a tolerance for residues of (E)-2-Hexen-1-yl acetate (CAS Reg. No. 2497-18-9); 1,3-Nonanediol acetate (mixed esters) (CAS Reg. No. 1322-17-4); 10-Undecenal (CAS Reg. No. 112-45-8); 10-Undecenoic acid (CAS Reg. No. 112-38-9); 10-Undecenoic acid, ethyl ester (CAS Reg. No. 692-86-4); 1H-3a,7-Methanoazulen-6-ol, octahydro-3,6,8,8-tetramethyl-,[3R-(3.α,3a.β,6.α,7.β,8α)] (CAS Reg. No. 77-53-2); 1-Hexanol, 3,5,5-trimethyl- (CAS Reg. No. 3452-97-9); 1-pentanol (CAS Reg. No. 71-41-0); 2,4-Hexadienyl isobutyrate (CAS Reg. No. 16491-24-0); 2,5,7-Octatrien-1-ol, 2,6-dimethyl, 1-acetate (CAS Reg. No. 197098-61-6); 2,6,6-Trimethyl-1&2-cyclohexen-1-carboxaldehyde (CAS Reg. No. 432-25-7); 2,6,6-Trimethyl-1-cyclohexen-1-acetaldehyde (CAS Reg. No. 472-66-2); 2,6-Nonadien-1-ol (CAS Reg. No. 7786-44-9); 2,6-Nonadienal diethyl acetal (CAS Reg. No. 67674-36-6); 2-Cyclohexylethyl acetate (CAS Reg. No. 21722-83-8); 2-Dodecenal (CAS Reg. No. 4826-62-4); 2-Formyl-6,6-dimethylbicyclo(3.1.1)hept-2-ene (CAS Reg. No. 564-94-3); 2-Hexen-1-ol (CAS Reg. No. 2305-21-7); 2-Methyl butyl acetate (CAS Reg. No. 624-41-9); 2-Methylbutyric acid (CAS Reg. No. 116-53-0); 2-Methyloctanal (CAS Reg. No. 7786-29-0); 2-Methylpent-2-en-1-oic acid (CAS Reg. No. 3142-72-1); 2-Methyl-trans-2-butenic acid (CAS Reg. No. 80-59-1); 2-Nonenal (CAS Reg. No. 2463-53-8); 3,7-Dimethyl-1-octanol (CAS Reg. No. 106-21-8); 3,7-Dimethyl-6-octen-1-ol (CAS Reg. No. 106-22-9); 3,7-Dimethyl-6-octenoic acid (CAS Reg. No. 502-47-6); 3-Hexen-1-ol, (3Z)- (CAS Reg. No. 928-96-1); 3-Hexen-1-ol, acetate, (3Z)- (CAS Reg. No. 3681-71-8); 3-hexenyl 2-methylbutanoate (CAS Reg. No. 10094-41-4); 3-Hexenyl formate (CAS Reg. No. 2315-09-5); 3-Methyl-2-buten-1-ol (CAS Reg. No. 556-82-1); 3-Methylbutyraldehyde (CAS Reg. No. 590-86-3); 3-Methylcrotonic acid (CAS Reg. No. 541-47-9); 4-Carvomenthenol (CAS Reg. No. 562-74-3); 4-Decenal (CAS Reg. No. 30390-50-2); 5-Octen-1-ol, (5Z)- (CAS Reg. No. 64275-73-6); 9-Decenal (CAS Reg. No. 39770-05-3); 9-Undecenal (CAS Reg. No. 143-14-6); Acetal (CAS Reg. No. 105-57-7); Acetic acid, octyl

ester (CAS Reg. No. 112-14-1); Amyl butyrate (CAS Reg. No. 540-18-1); Amyl formate (CAS Reg. No. 638-49-3); Amyl hexanoate (CAS Reg. No. 540-07-8); Bois de rose oil (CAS Reg. No. 8015-77-8); Butanoic acid, 3-methyl-, 2-methylpropyl ester (CAS Reg. No. 589-59-3); Butyl 10-undecenoate (CAS Reg. No. 109-42-2); Butyl acetate (CAS Reg. No. 123-86-4); Butyl butyrate (CAS Reg. No. 109-21-7); Butyl butyryllactate (CAS Reg. No. 7492-70-8); Butyl isovalerate (CAS Reg. No. 109-19-3); Chamomile flower, Roman, oil (*Anthemis nobilis* L.) (CAS Reg. No. 8015-92-7); cis-3-Hexenyl isobutyrate (CAS Reg. No. 41519-23-7); cis-3-Hexenyl propionate (CAS Reg. No. 33467-74-2); cis-3-Hexenyl tiglate (CAS Reg. No. 67883-79-8); cis- α -Santalol (CAS Reg. No. 115-71-9); cis- β -Santalol (CAS Reg. No. 77-42-9); Citral (CAS Reg. No. 5392-40-5); Citral dimethyl acetal (CAS Reg. No. 7549-37-3); Citronellal (CAS Reg. No. 106-23-0); Citronelloxyacetaldehyde (CAS Reg. No. 7492-67-3); Citronellyl butyrate (CAS Reg. No. 141-16-2); Citronellyl formate (CAS Reg. No. 105-85-1); Citronellyl isobutyrate (CAS Reg. No. 97-89-2); Citronellyl propionate (CAS Reg. No. 141-14-0); Citronellyl tiglate (CAS Reg. No. 24717-85-9); Clary oil (*Salvia sclarea* L.) (CAS Reg. No. 8016-63-5); Cognac oil, green (CAS Reg. No. 8016-21-5); Coriander oil (*Coriandrum sativum* L.) (CAS Reg. No. 8008-52-4); Decanoic acid, 4-hydroxy-4-methyl-, γ -,lactone (CAS Reg. No. 7011-83-8); Decyl acetate (CAS Reg. No. 112-17-4); Diethyl sebacate (CAS Reg. No. 110-40-7); Diethyl tartrate (CAS Reg. No. 87-91-2); Dimethylcyclohex-3-ene-1-carbaldehyde (CAS Reg. No. 27939-60-2); DL-Tartaric acid (CAS Reg. No. 133-37-9); Ethyl 2-hexylacetoacetate (CAS Reg. No. 29214-60-6); Ethyl 2-methyl-3-pentenoate (CAS Reg. No. 1617-23-8); Ethyl 2-methylbutyrate (CAS Reg. No. 7452-79-1); Ethyl 2-methylpentanoate (CAS Reg. No. 39255-32-8); Ethyl 3-hydroxybutyrate (CAS Reg. No. 5405-41-4); Ethyl formate (CAS Reg. No. 109-94-4); Ethyl isovalerate (CAS Reg. No. 108-64-5); ethyl lactate (CAS Reg. No. 97-64-3); Ethyl levulinate (CAS Reg. No. 539-88-8); Ethyl propionate (CAS Reg. No. 105-37-3); Ethyl tiglate (CAS Reg. No. 5837-78-5); Farnesol (CAS Reg. No. 4602-84-0); Farnesyl acetate (CAS Reg. No. 29548-30-9); gamma-Valerolactone (CAS Reg. No. 108-29-2); Geranic acid (CAS Reg. No. 459-80-3); Geraniol (CAS Reg. No.

106-24-1); Geranyl butyrate (CAS Reg. No. 106-29-6); Geranyl formate (CAS Reg. No. 105-86-2); Geranyl isobutyrate (CAS Reg. No. 2345-26-8); Geranyl propionate (CAS Reg. No. 105-90-8); Geranyl tiglate (CAS Reg. No. 7785-33-3); Helichrysum leaf oil (*Helichrysum angustifolium*) (CAS Reg. No. 8023-95-8); Heptyl acetate (CAS Reg. No. 112-06-1); Hexadecanoic acid (CAS Reg. No. 57-10-3); Hexadecanoic acid, ethyl ester (CAS Reg. No. 628-97-7); Hexyl 2-methylbutanoate (CAS Reg. No. 10032-15-2); Hexyl octanoate (CAS Reg. No. 1117-55-1); Hydroxycitronellal dimethyl acetal (CAS Reg. No. 141-92-4); Hyssop oil (*Hyssopus officinalis* L.) (CAS Reg. No. 8006-83-5); Isoamyl acetate (CAS Reg. No. 123-92-2); Isoamyl alcohol (CAS Reg. No. 123-51-3); Isoamyl isovalerate (CAS Reg. No. 659-70-1); Isoamyl propionate (CAS Reg. No. 105-68-0); Isobutyl 2-butenate (CAS Reg. No. 589-66-2); Isobutyl angelate (CAS Reg. No. 7779-81-9); Isobutyl butyrate (CAS Reg. No. 539-90-2); Isobutyraldehyde (CAS Reg. No. 78-84-2); Isobutyric acid (CAS Reg. No. 79-31-2); Isovaleric acid (CAS Reg. No. 503-74-2); Jasmine lactone (CAS Reg. No. 25524-95-2); laevo-Bornyl acetate (CAS Reg. No. 5655-61-8); Lauryl acetate (CAS Reg. No. 112-66-3); Levulinic acid (CAS Reg. No. 123-76-2); Linalool (CAS Reg. No. 78-70-6); Linalool acetate (CAS Reg. No. 115-95-7); Linalyl formate (CAS Reg. No. 115-99-1); Linalyl hexanoate (CAS Reg. No. 7779-23-9); Linalyl isobutyrate (CAS Reg. No. 78-35-3); Linalyl isovalerate (CAS Reg. No. 1118-27-0); Linalyl propionate (CAS Reg. No. 144-39-8); Linoleic acid (CAS Reg. No. 60-33-3); Linoleic acid, methyl ester (CAS Reg. No. 112-63-0); Lovage oil (*Levisticum officinale Koch*) (CAS Reg. No. 8016-31-7); Methyl 2-methylbutyrate (CAS Reg. No. 868-57-5); Methyl 3,7-dimethyl-6-octenoate (CAS Reg. No. 2270-60-2); Methyl 3-nonenoate (CAS Reg. No. 13481-87-3); Methyl butyrate (CAS Reg. No. 623-42-7); Methyl hexanoate (CAS Reg. No. 106-70-7); Methyl linolenate (CAS Reg. No. 301-00-8); Methyl octanoate (CAS Reg. No. 111-11-5); Methyl tetradecanoate (CAS Reg. No. 124-10-7); Methyl undec-10-enoate (CAS Reg. No. 111-81-9); Musk ambrette (CAS Reg. No. 123-69-3); n-Butyl 2-methylbutyrate (CAS Reg. No. 15706-73-7); Nerolidiol (CAS Reg. No. 142-50-7); Neryl acetate (CAS Reg. No. 141-12-8); Neryl formate (CAS Reg. No. 2142-94-

1); Nonyl acetate (CAS Reg. No. 143-13-5); Octadecanoic acid (CAS Reg. No. 57-11-4); Oil of citronella (CAS Reg. No. 8000-29-1); Oils, geranium (CAS Reg. No. 8000-46-2); Oils, lavender (CAS Reg. No. 8000-28-0); Oils, lemon, terpene-free (CAS Reg. No. 68648-39-5); Oils, palmarosa (CAS Reg. No. 8014-19-5); Oleic acid (CAS Reg. No. 112-80-1); Oleic acid, ethyl ester (CAS Reg. No. 111-62-6); Oleyl alcohol (CAS Reg. No. 143-28-2); Orange flower water absolute (CAS Reg. No. 8030-28-2); Oxacycloheptadec-10-ene-2-one (CAS Reg. No. 28645-51-4); p- α,α -Trimethylbenzyl alcohol (CAS Reg. No. 1197-01-9); Petitgrain Paraguay oil (CAS Reg. No. 8016-44-2 (NEW CAS Reg. No. 8014-17-3); p-Mentha-1,8-dien-7-ol (CAS Reg. No. 536-59-4); p-Mentha-1,8-dien-7-yl acetate (CAS Reg. No. 15111-96-3); Propanoic acid (CAS Reg. No. 79-09-4); Propylene glycol (CAS Reg. No. 57-55-6); Pyruvic acid (CAS Reg. No. 127-17-3); Sandalwood yellow oil (*Santalum album L.*) (CAS Reg. No. 8006-87-9); Santalol (CAS Reg. No. 11031-45-1); Sclareol (CAS Reg. No. 515-03-7); Spike lavender oil (*Lavandula spp.*) (CAS Reg. No. 8016-78-2); Tartaric acid (CAS Reg. No. 87-69-4); Terpinyl acetate (Isomer mixture) (CAS Reg. No. 8007-35-0); Tetradecanoic acid, ethyl ester (CAS Reg. No. 124-06-1); Tetrahydrogeranial (CAS Reg. No. 5988-91-0); trans-3-Heptenyl 2-methylpropanoate (CAS Reg. No. 67801-45-0); Violet leaves absolute (*Viola odorata L.*) (CAS Reg. No. 90147-36-7); α,α -Dimethylphenethyl alcohol (CAS Reg. No. 100-86-7); α -Terpinyl propionate (CAS Reg. No. 80-27-3); γ -Butyrolactone (CAS Reg. No. 96-48-0); γ -Dodecalactone (CAS Reg. No. 2305-05-7); δ -Dodecalactone (CAS Reg. No. 713-95-1); δ -Octalactone (CAS Reg. No. 698-76-0); ϵ -Decalactone (CAS Reg. No. 5579-78-2); ω -6-Hexadecenlactone (CAS Reg. No. 7779-50-2); when used as inert ingredients (fragrance components) in pesticide formulations applied to food contact surfaces in public eating places, dairy-processing equipment, and food-processing equipment with end-use concentrations not to exceed 100 ppm. That document referenced a summary of the petition prepared by Innovative Reform Group on behalf of The Clorox Company, which is available in the docket, <https://www.regulations.gov>. There were no comments received in response to the notice of filing.

III. Inert Ingredient Definition

Inert ingredients are all ingredients that are not active ingredients as defined in 40 CFR 153.125 and include, but are not limited to, the following types of ingredients (except when they have a pesticidal efficacy of their own): solvents such as alcohols and hydrocarbons; surfactants such as polyoxyethylene polymers and fatty acids; carriers such as clay and diatomaceous earth; thickeners such as carrageenan and modified cellulose; wetting, spreading, and dispersing agents; propellants in aerosol dispensers; microencapsulating agents; and emulsifiers. The term “inert” is not intended to imply nontoxicity; the ingredient may or may not be chemically active. Generally, EPA has exempted inert ingredients from the requirement of a tolerance based on the low toxicity of the individual inert ingredients.

IV. Aggregate Risk Assessment and Determination of Safety

Section 408(c)(2)(A)(i) of FFDCA allows EPA to establish an exemption from the requirement for a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance is “safe.” Section 408(c)(2)(A)(ii) of FFDCA defines “safe” to mean that “there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.” This includes exposure through drinking water and in residential settings but does not include occupational exposure. When making a safety determination for an exemption for the requirement of a tolerance, FFDCA section 408(c)(2)(B) directs EPA to consider the considerations in section 408(b)(2)(C) and (D). Section 408(b)(2)(C) of FFDCA requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to “ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue....” Section 408(b)(2)(D) lists other factors for EPA’s consideration in making safety determinations, *e.g.*, the validity, completeness, and reliability of available data, nature of toxic effects, available information concerning the cumulative effects of the pesticide chemical

and other substances with a common mechanism of toxicity, and available information concerning aggregate exposure levels to the pesticide chemical and other related substances, among other factors.

EPA establishes exemptions from the requirement of a tolerance only in those cases where it can be clearly demonstrated that the risks from aggregate exposure to pesticide chemical residues under reasonably foreseeable circumstances will pose no harm to human health. In order to determine the risks from aggregate exposure to pesticide inert ingredients, the Agency considers the toxicity of the inert in conjunction with possible exposure to residues of the inert ingredient through food, drinking water, and through other exposures that occur as a result of pesticide use in residential settings. If EPA is able to determine that a finite tolerance is not necessary to ensure that there is a reasonable certainty that no harm will result from aggregate exposure to the inert ingredient, an exemption from the requirement of a tolerance may be established.

Consistent with FFDCA section 408(c)(2)(A), and the factors specified in FFDCA section 408(c)(2)(B), EPA has reviewed the available scientific data and other relevant information in support of this action. EPA has sufficient data to assess the hazards of and to make a determination on aggregate exposure for the various fragrance components identified in Unit II of this document, including exposure resulting from the exemptions established by this action. EPA's assessment of exposures and risks associated with these various fragrance components follows.

A. Toxicological Profile

EPA has evaluated the available toxicity data and considered their validity, completeness, and reliability as well as the relationship of the results of the studies to human risk. EPA has also considered available information concerning the variability of the sensitivities of major identifiable subgroups of consumers, including infants and children. Specific information on the studies received and the nature of the adverse effects caused by the various fragrance

components identified in Unit II, as well as the no-observed-adverse-effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL) from the toxicity studies, are discussed in this unit.

The Agency assessed these fragrance components via the Threshold of Toxicological Concern (TTC) approach as outlined by the European Food Safety Authority (EFSA) in their 2019 guidance document on the use of TTC in food safety assessment. Information regarding the database of studies and chemicals used to derive TTCs are reviewed therein. The TTC approach has been used by the Joint Expert Committee on Food Additives of the United Nations' (U.N.) Food and Agriculture Organization and the World Health Organization (JECFA), the former Scientific Committee on Food of the European Commission, the European Medicines Agency, and EFSA.

Information from JECFA reports as well as predictive toxicology using the Organisation for Economic Co-operation and Development (OECD) Quantitative Structure-Activity Relationships (QSAR) Toolbox was used to confirm that the fragrances listed in Unit II have low carcinogenic potential and are thus good candidates for the application of the TTC method. Although 27 chemicals had *in silico* carcinogenicity alerts, JECFA concluded and EPA concurs that all fragrances listed in Unit II have low carcinogenic potential, based on *in vitro* and/or *in vivo* genotoxicity studies available on the chemical or structurally related chemicals. Therefore, the TTC method can be applied to these fragrances.

TTCs are derived from a conservative and rigorous approach to establish generic threshold values for human exposure at which a very low probability of adverse effects is likely. By comparing a range of compounds by Cramer Class (classes I, II, and III which correspond to the probability of low, moderate and high toxicity) and NOEL (no-observed-effect-level), fifth percentile NOELs were established for each Cramer Class as "Human Exposure Thresholds". These values were 3, 0.91 and 0.15 mg/kg/day for classes I, II, and III, respectively.

B. Toxicological Points of Departure/Levels of Concern

Once a pesticide's toxicological profile is determined, EPA identifies toxicological points of departure (POD) and levels of concern to use in evaluating the risk posed by human exposure to the pesticide. For hazards that have a threshold below which there is no appreciable risk, the toxicological POD is used as the basis for derivation of reference values for risk assessment. PODs are developed based on a careful analysis of the doses in each toxicological study to determine the dose at which no adverse effects are observed (the NOAEL) and the lowest dose at which adverse effects of concern are identified (the LOAEL). Uncertainty/safety factors are used in conjunction with the POD to calculate a safe exposure level—generally referred to as a population-adjusted dose (PAD) or a reference dose (RfD)—and a safe margin of exposure (MOE). For non-threshold risks, the Agency assumes that any amount of exposure will lead to some degree of risk. Thus, the Agency estimates risk in terms of the probability of an occurrence of the adverse effect expected in a lifetime. For more information on the general principles EPA uses in risk characterization and a complete description of the risk assessment process, see <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/overview-risk-assessment-pesticide-program>.

The human exposure threshold value for threshold (*i.e.*, non-cancer) risks is based upon Cramer structural class. All of the fragrance components listed in Unit II are in Cramer Class I, which is defined as chemicals of simple structure and efficient modes of metabolism, suggesting low oral toxicity. Therefore, the NOEL of 3 mg/kg/day is selected as the point of departure for all exposure scenarios assessed (chronic dietary, incidental oral, dermal and inhalation exposures).

C. Exposure Assessment

1. *Dietary exposure from food and feed uses.* In evaluating dietary exposure to the fragrance components listed in Unit II (*e.g.*, ingesting foods that come in contact with surfaces treated with pesticide formulations containing these fragrance components, and drinking water exposures), EPA considered exposure under the proposed exemptions from the requirement of a

tolerance.

The dietary assessment for food contact sanitizer solutions calculated the Daily Dietary Dose (DDD) and the Estimated Daily Intake (EDI). The assessment considered application rates, residual solution or quantity of solution remaining on the treated surface without rinsing with potable water, surface area of the treated surface which comes into contact with food, pesticide migration fraction, and body weight. These assumptions are based on U.S. Food and Drug Administration guidelines.

2. *From non-dietary exposure.* The term “residential exposure” is used in this document to refer to non-occupational, non-dietary exposure (*e.g.*, textiles (clothing and diapers), carpets, swimming pools, and hard surface disinfection on walls, floors, tables).

The fragrance components listed in Unit II may be used as inert ingredients in products that are registered for specific uses that may result in residential exposure, such as pesticides used in and around the home. The Agency conducted a conservative assessment of potential residential exposure by assessing various fragrance components in disinfectant-type uses (indoor scenarios). The Agency’s assessment of adult residential exposure combines high-end dermal and inhalation handler exposure from indoor hard surface, wiping, and aerosol spray uses. The Agency’s assessment of children’s residential exposure includes total post-application exposures associated with contact with treated indoor surfaces (dermal and hand-to-mouth exposures).

3. *Cumulative effects from substances with a common mechanism of toxicity.* Section 408(b)(2)(D)(v) of FFDCFA requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider “available information” concerning the cumulative effects of a particular pesticide’s residues and “other substances that have a common mechanism of toxicity.”

Based on the lack of toxicity in the available database, EPA has not found the fragrance components listed in Unit II to share a common mechanism of toxicity with any other substances, nor do they appear to produce a toxic metabolite produced by other substances. For

the purposes of the tolerance exemptions established in this rule, therefore, EPA has assumed that the fragrance components listed in Unit II do not have common mechanisms of toxicity with other substances. For information regarding EPA's efforts to determine which chemicals have a common mechanism of toxicity and to evaluate the cumulative effects of such chemicals, see EPA's website at <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/cumulative-assessment-risk-pesticides>.

D. Additional Safety Factor for the Protection of Infants and Children

Section 408(b)(2)(C) of FFDCA provides that EPA shall apply an additional tenfold (10X) margin of safety for infants and children in the case of threshold effects to account for prenatal and postnatal toxicity and the completeness of the database on toxicity and exposure unless EPA determines based on reliable data that a different margin of safety will be safe for infants and children. This additional margin of safety is commonly referred to as the Food Quality Protection Act (FQPA) Safety Factor (SF). In applying this provision, EPA either retains the default value of 10X, or uses a different additional safety factor when reliable data available to EPA support the choice of a different factor.

The FQPA SF has been reduced to 1X in this risk assessment because clear NOELs and LOELs were established in the studies used to derive the endpoints (which included developmental and reproductive toxicity studies), maternal and developmental-specific 5th percentile NOELs indicate low potential for offspring susceptibility, and the conservative assumptions made in the exposure assessment are unlikely to underestimate risk.

E. Aggregate Risks and Determination of Safety

EPA determines whether acute and chronic dietary pesticide exposures are safe by comparing aggregate exposure estimates to the acute PAD (aPAD) and chronic PAD (cPAD). For linear cancer risks, EPA calculates the lifetime probability of acquiring cancer given the estimated aggregate exposure. Short-, intermediate-, and chronic-term risks are evaluated by comparing the estimated aggregate food, water, and residential exposure to the appropriate PODs

to ensure that an adequate MOE exists.

1. *Acute aggregate risk.* An acute aggregate risk assessment takes into account acute exposure estimates from dietary consumption of food and drinking water. No adverse effects resulting from a single oral exposure were identified and no acute dietary endpoint was selected for any of the fragrance components listed in Unit II. Therefore, these fragrance components are not expected to pose an acute risk.

2. *Short-term aggregate risk.* Short-term aggregate exposure takes into account short-term residential exposure plus chronic exposure to food and water (considered to be a background exposure level). For residential handler short-term exposure scenarios, MOEs ranged from 140 to 2,500, while for residential post-application exposure scenarios, MOEs ranged from 380 to 7,400. These MOEs are greater than the level of concern (LOC) of 100 and therefore are not of concern. The short-term aggregate MOE is 109 for adults and 135 for children, which are greater than the LOC of 100 and therefore are not of concern.

3. *Intermediate-term risk.* Intermediate-term aggregate exposure takes into account intermediate-term residential exposure plus chronic exposure to food and water (considered to be a background exposure level). An intermediate-term adverse effect was identified; however, the fragrance components listed in Unit II are not currently used as an inert ingredient in pesticide products that are registered for any use patterns that would result in intermediate-term residential exposure. Because there is no intermediate-term residential exposure and chronic dietary exposure has already been assessed under the appropriately protective cPAD (which is at least as protective as the POD used to assess intermediate-term risk), no further assessment of intermediate-term risk is necessary, and EPA relies on the chronic dietary risk assessment for evaluating intermediate-term risk for these fragrance components.

4. *Chronic aggregate risk.* Using the exposure assumptions described in this unit for chronic exposure, EPA has concluded that chronic exposure to the fragrance components listed in Unit II from food and water will utilize 19% of the cPAD for the U.S. population and 48% of

the cPAD for children 1 to 2 years old, the population group receiving the greatest exposure.

Chronic residential exposure to residues of these fragrance components is not expected.

Therefore, the chronic aggregate risk is equal to the chronic dietary exposure for children 1 to 2 years old (48% of the PAD).

5. Aggregate cancer risk for U.S. population. There is low concern for genotoxicity/carcinogenicity in humans for the fragrance components listed in Unit II of this document. Therefore, the assessment under the TTC value for non-cancer risks is protective for all risks, including carcinogenicity.

6. Determination of safety. Based on these risk assessments, EPA concludes that there is a reasonable certainty that no harm will result to the general population, or to infants and children, from aggregate exposure to residues of the fragrance components listed in Unit II.

V. Other Considerations

Analytical Enforcement Methodology

An analytical method is not required for enforcement purposes since the Agency is not establishing a numerical tolerance for residues of the fragrance components listed in Unit II of this document in or on any food commodities. EPA is establishing limitations on the amount of these fragrance components that may be used in antimicrobial pesticide formulations. These limitations will be enforced through the pesticide registration process under the Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”), 7 U.S.C. 136 *et seq.* EPA will not register any pesticide formulation for food use that contains these fragrance components in excess of 100 ppm in the final pesticide formulation.

VI. Conclusions

Therefore, exemptions from the requirement of a tolerance are established for residues of the various fragrance components listed in Unit II of this document when used as inert ingredients (fragrance components) in pesticide formulations applied to food-contact surfaces in public eating places, dairy-processing equipment, and food-processing equipment and utensils

with an end-use concentration not to exceed 100 ppm under 40 CFR 180.940(a).

VII. Statutory and Executive Order Reviews

This action establishes exemptions from the requirement of a tolerance under FFDCA section 408(d) in response to a petition submitted to the Agency. The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled “Regulatory Planning and Review” (58 FR 51735, October 4, 1993). Because this action has been exempted from review under Executive Order 12866, this action is not subject to Executive Order 13211, entitled “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use” (66 FR 28355, May 22, 2001), or Executive Order 13045, entitled “Protection of Children from Environmental Health Risks and Safety Risks” (62 FR 19885, April 23, 1997). This action does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA) (44 U.S.C. 3501 *et seq.*), nor does it require any special considerations under Executive Order 12898, entitled “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (59 FR 7629, February 16, 1994).

Since tolerances and exemptions that are established on the basis of a petition under FFDCA section 408(d), such as the exemptions in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*), do not apply.

This action directly regulates growers, food processors, food handlers, and food retailers, not States or Tribes, nor does this action alter the relationships or distribution of power and responsibilities established by Congress in the preemption provisions of FFDCA section 408(n)(4). As such, the Agency has determined that this action will not have a substantial direct effect on States or Tribal governments, on the relationship between the National Government and the States or Tribal governments, or on the distribution of power and responsibilities among the various levels of government or between the Federal Government and Indian Tribes. Thus, the

Agency has determined that Executive Order 13132, entitled “Federalism” (64 FR 43255, August 10, 1999), and Executive Order 13175, entitled “Consultation and Coordination with Indian Tribal Governments” (65 FR 67249, November 9, 2000), do not apply to this action. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act (UMRA) (2 U.S.C. 1501 *et seq.*).

This action does not involve any technical standards that would require Agency consideration of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) (15 U.S.C. 272 note).

VIII. Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the *Federal Register*. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: February 17, 2023.

Daniel Rosenblatt,

Acting Director, Registration Division, Office of Pesticide Programs.

Therefore, for the reasons stated in the preamble, EPA is amending 40 CFR chapter I as follows:

PART 180--TOLERANCES AND EXEMPTIONS FOR PESTICIDE CHEMICAL RESIDUES IN FOOD

1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 321(q), 346a and 371.

2. Section 180.940 is amended by adding in alphabetical order the following inert ingredients to table 1 to paragraph (a):

- a. Acetal.
- b. Acetic acid, octyl ester.
- c. Amyl butyrate.
- d. Amyl formate.
- e. Amyl hexanoate.
- f. Bois de rose oil.
- g. Butanoic acid, 3-methyl-, 2-methylpropyl ester.
- h. Butyl acetate.
- i. Butyl butyrate.
- j. Butyl butyryllactate.
- k. Butyl isovalerate.
- l. n-Butyl 2-methylbutyrate.
- m. Butyl 10-undecenoate.
- n. γ -Butyrolactone.
- o. 4-Carvomenthenol.
- p. Chamomile flower, Roman, oil (*Anthemis nobilis* L.).
- q. Citral dimethyl acetal.
- r. Citronellal.

- s. Citronelloxyacetaldehyde.
- t. Citronellyl butyrate.
- u. Citronellyl formate.
- v. Citronellyl isobutyrate.
- w. Citronellyl propionate.
- x. Citronellyl tiglate.
- y. Clary oil (*Salvia sclarea* L.).
- z. Cognac oil, green.
- aa. Coriander oil (*Coriandrum sativum* L.).
- bb. 2-Cyclohexylethyl acetate.
- cc. ϵ -Decalactone.
- dd. Decanoic acid, 4-hydroxy-4-methyl- γ -lactone.
- ee. 4-Decenal.
- ff. 9-Decenal.
- gg. Decyl acetate.
- hh. Diethyl sebacate.
- ii. Diethyl tartrate.
- jj. 3,7-Dimethyl-6-octenoic acid.
- kk. Dimethylcyclohex-3-ene-1-carbaldehyde.
- ll. α,α -Dimethylphenethyl alcohol.
- mm. γ -Dodecalactone.
- nn. δ -Dodecalactone.
- oo. 2-Dodecenal.
- pp. Ethyl formate.
- qq. Ethyl 2-hexylacetoacetate.
- rr. Ethyl 3-hydroxybutyrate.

ss. Ethyl isovalerate.

tt. Ethyl levulinate.

uu. Ethyl 2-methyl-3-pentenoate.

vv. Ethyl 2-methylpentanoate.

ww. Ethyl propionate.

xx. Ethyl tiglate.

yy. Farnesol.

zz. Farnesyl acetate.

aaa. 2-Formyl-6,6-dimethylbicyclo(3.1.1)hept-2-ene.

bbb. Geranic acid.

ccc. Geraniol.

ddd. Geranyl butyrate.

eee. Geranyl formate.

fff. Geranyl isobutyrate.

ggg. Geranyl propionate.

hhh. Geranyl tiglate.

iii. Helichrysum leaf oil (*Helichrysum angustifolium*).

jjj. trans-3-Heptenyl 2-methylpropanoate.

kkk. Heptyl acetate.

lll. Hexadecanoic acid.

mmm. Hexadecanoic acid, ethyl ester.

nnn. ω -6-Hexadecenlactone.

ooo. 2,4-Hexadienyl isobutyrate.

ppp. 1-Hexanol, 3,5,5-trimethyl-.

qqq. 2-Hexen-1-ol.

rrr. 3-Hexen-1-ol, (3Z)-.

sss. (E)-2-Hexen-1-yl acetate.

ttt. cis-3-Hexenyl isobutyrate.

uuu. cis-3-Hexenyl propionate.

vvv. cis-3-Hexenyl tiglate.

www. 3-Hexenyl formate.

xxx. Hexyl 2-methylbutanoate.

yyy. Hexyl octanoate.

zzz. Hydroxycitronellal dimethyl acetal.

aaaa. Hyssop oil (*Hyssopus officinalis* L.).

bbbb. Isoamyl isovalerate.

cccc. Isoamyl propionate.

dddd. Isobutyl angelate.

eeee. Isobutyl 2-butenolate.

ffff. Isobutyl butyrate.

gggg. Isobutyraldehyde.

hhhh. Isobutyric acid.

iiii. Isovaleric acid.

jjjj. Jasmine lactone.

kkkk. laevo-Bornyl acetate.

llll. Lauryl acetate.

mmmm. Levulinic acid.

nnnn. Linalool acetate.

oooo. Linalyl formate.

pppp. Linalyl hexanoate.

qqqq. Linalyl isobutyrate.

rrrr. Linalyl isovalerate.

ssss. Linalyl propionate.

tttt. Linoleic acid, methyl ester.

uuuu. Lovage oil (*Levisticum officinale* Koch).

vvvv. p-Mentha-1,8-dien-7-ol.

www. p-Mentha-1,8-dien-7-yl acetate.

xxxx. 1H-3a,7-Methanoazulen-6-ol, octahydro-3,6,8,8-tetramethyl-, [3R-(3.α,3a.β,6.α,7.β,8α)].

yyyy. 3-Methyl-2-buten-1-ol.

zzzz. 2-Methyl butyl acetate.

aaaaa. 3-Methylbutyraldehyde

bbbbb. Methyl butyrate.

ccccc. 2-Methylbutyric acid.

dddd. 3-Methylcrotonic acid.

eeeee. Methyl 3,7-dimethyl-6-octenoate.

ffff. Methyl hexanoate.

ggggg. Methyl linolenate.

hhhhh. Methyl 2-methylbutyrate.

iiii. Methyl 3-nonenoate.

jjjjj. 2-Methyloctanal.

kkkkk. Methyl octanoate.

llll. 2-Methylpent-2-en-1-oic acid.

mmmmm. Methyl tetradecanoate.

nnnnn. 2-Methyl-trans-2-butenic acid.

oooo. Methyl undec-10-enoate.

ppppp. Musk ambrette.

qqqqq. Nerolidiol.

rrrrr. Neryl formate.

sssss. 2,6-Nonadien-1-ol.

ttttt. 2,6-Nonadienal diethyl acetal.

uuuuu. 1,3-Nonanediol acetate (mixed esters).

vvvvv. 2-Nonenal.

wwwww. Nonyl acetate.

xxxxx. Octadecanoic acid.

yyyyy. δ -Octalactone.

zzzzz. 2,5,7-Octatrien-1-ol, 2,6-dimethyl0, 1-acetate.

aaaaa. 5-Octen-1-ol, (5Z)-.

bbbbb. Oil of citronella.

ccccc. Oils, geranium.

dddddd. Oils, lavender.

eeeeee. Oils, lemon, terpene-free.

ffffff. Oils, palmarosa.

gggggg. Oleic acid.

hhhhh. Oleic acid, ethyl ester.

iiiiii. Oleyl alcohol.

jjjjj. Orange flower water absolute.

kkkkk. Oxacycloheptadec-10-ene-2-one.

lllll. 1-pentanol.

mmmmm. Petitgrain Paraguay oil.

nnnnn. Propanoic acid.

ooooo. Pyruvic acid.

ppppp. Sandalwood yellow oil (*Santalum album* L.).

qqqqqq. Santalol.
 rrrrrr. cis- α -Santalol.
 ssssss. cis- β -Santalol.
 tttttt. Sclareol.
 uuuuuu. Spike lavender oil (*Lavandula* spp.).
 vvvvvv. Tartaric acid.
 wwwwww. DL-Tartaric acid.
 xxxxxx. α -Terpinyl propionate.
 yyyyyy. Tetradecanoic acid, ethyl ester.
 zzzzzz. Tetrahydrogeranial.
 aaaaaa. 2,6,6-Trimethyl-1-cyclohexen-1-acetaldehyde.
 bbbbbb. 2,6,6-Trimethyl-1&2-cyclohexen-1-carboxaldehyde.
 ccccc. p- α,α -Trimethylbenzyl alcohol.
 ddddddd. 9-Undecenal.
 eeeeeee. 10-Undecenal.
 fffffff. 10-Undecenoic acid.
 ggggggg. 10-Undecenoic acid, ethyl ester.
 hhhhhhh. γ -Valerolactone.
 ppppppp. Violet leaves absolute (*Viola odorata* L.).

The additions read as follows:

§ 180.940 Tolerance exemptions for active and inert ingredients for use in antimicrobial formulations (Food-contact surface sanitizing solutions).

* * * * *

(a) * * *

Table 1 to Paragraph (a)

Pesticide Chemical	CAS Reg. No.	Limits
* * *	* * *	* * *

Acetal	105-57-7	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	*	* * *
Acetic acid, octyl ester	112-14-1	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
Amyl butyrate	540-18-1	When ready for use, the end-use concentration is not to exceed 100 ppm
Amyl formate	638-49-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Amyl hexanoate	540-07-8	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
Bois de rose oil	8015-77-8	When ready for use, the end-use concentration is not to exceed 100 ppm
Butanoic acid, 3-methyl-, 2-methylpropyl ester	589-59-3	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
Butyl acetate	123-86-4	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
Butyl butyrate	109-21-7	When ready for use, the end-use concentration is not to exceed 100 ppm
Butyl butyryllactate	7492-70-8	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
Butyl isovalerate	109-19-3	When ready for use, the end-use concentration is not to exceed 100 ppm
n-Butyl 2-methylbutyrate	15706-73-7	When ready for use, the end-use concentration is not to exceed 100 ppm
Butyl 10-undecenoate	109-42-2	When ready for use, the end-use concentration is not to exceed 100 ppm
γ -Butyrolactone	96-48-0	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
4-Carvomenthenol	562-74-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Chamomile flower, Roman, oil (Anthemis nobilis L.)	8015-92-7	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
Citral dimethyl acetal	7549-37-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Citronellal	106-23-0	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *
Citronelloxyacetaldehyde	7492-67-3	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* * *

Citronellyl butyrate	141-16-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Citronellyl formate	105-85-1	When ready for use, the end-use concentration is not to exceed 100 ppm
Citronellyl isobutyrate	97-89-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Citronellyl propionate	141-14-0	When ready for use, the end-use concentration is not to exceed 100 ppm
Citronellyl tiglate	24717-85-9	When ready for use, the end-use concentration is not to exceed 100 ppm
Clary oil (Salvia sclarea L.)	8016-63-5	When ready for use, the end-use concentration is not to exceed 100 ppm
Cognac oil, green	8016-21-5	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
Coriander oil (Coriandrum sativum L.)	8008-52-4	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
2-Cyclohexylethyl acetate	21722-83-8	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
ϵ -Decalactone	5579-78-2	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
Decanoic acid, 4-hydroxy-4-methyl- γ -lactone	7011-83-8	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
4-Decenal	30390-50-2	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
9-Decenal	39770-05-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Decyl acetate	112-17-4	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
Diethyl sebacate	110-40-7	When ready for use, the end-use concentration is not to exceed 100 ppm
Diethyl tartrate	87-91-2	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
3,7-Dimethyl-6-octenoic acid	502-47-6	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
Dimethylcyclohex-3-ene-1-carbaldehyde	27939-60-2	When ready for use, the end-use concentration is not to exceed 100 ppm
α,α -Dimethylphenethyl alcohol	100-86-7	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *		
γ -Dodecalactone	2305-05-7	When ready for use, the end-use concentration is not to exceed 100 ppm

δ-Dodecalactone	713-95-1	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
2-Dodecenal	4826-62-4	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Ethyl formate	109-94-4	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Ethyl 2-hexylacetoacetate	29214-60-6	When ready for use, the end-use concentration is not to exceed 100 ppm
Ethyl 3-hydroxybutyrate	5405-41-4	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Ethyl isovalerate	108-64-5	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Ethyl levulinate	539-88-8	When ready for use, the end-use concentration is not to exceed 100 ppm
Ethyl 2-methyl-3-pentenoate	1617-23-8	When ready for use, the end-use concentration is not to exceed 100 ppm
Ethyl 2-methylpentanoate	39255-32-8	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Ethyl propionate	105-37-3	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Ethyl tiglate	5837-78-5	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Farnesol	4602-84-0	When ready for use, the end-use concentration is not to exceed 100 ppm
Farnesyl acetate	29548-30-9	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
2-Formyl-6,6-dimethylbicyclo(3.1.1)hept-2-ene	564-94-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Geranic acid	459-80-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Geraniol	106-24-1	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Geranyl butyrate	106-29-6	When ready for use, the end-use concentration is not to exceed 100 ppm
Geranyl formate	105-86-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Geranyl isobutyrate	2345-26-8	When ready for use, the end-use concentration is not to exceed 100 ppm

Geranyl propionate	105-90-8	When ready for use, the end-use concentration is not to exceed 100 ppm
Geranyl tiglate	7785-33-3	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
Helichrysum leaf oil (Helichrysum angustifolium)	8023-95-8	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
trans-3-Heptenyl 2-methylpropanoate	67801-45-0	When ready for use, the end-use concentration is not to exceed 100 ppm
Heptyl acetate	112-06-1	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
Hexadecanoic acid	57-10-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Hexadecanoic acid, ethyl ester	628-97-7	When ready for use, the end-use concentration is not to exceed 100 ppm
ω-6-Hexadecenlactone	7779-50-2	When ready for use, the end-use concentration is not to exceed 100 ppm
2,4-Hexadienyl isobutyrate	16491-24-0	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
1-Hexanol, 3,5,5-trimethyl-	3452-97-9	When ready for use, the end-use concentration is not to exceed 100 ppm
2-Hexen-1-ol	2305-21-7	When ready for use, the end-use concentration is not to exceed 100 ppm
3-Hexen-1-ol, (3Z)-	928-96-1	When ready for use, the end-use concentration is not to exceed 100 ppm
(E)-2-Hexen-1-yl acetate	2497-18-9	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
cis-3-Hexenyl isobutyrate	41519-23-7	When ready for use, the end-use concentration is not to exceed 100 ppm
cis-3-Hexenyl propionate	33467-74-2	When ready for use, the end-use concentration is not to exceed 100 ppm
cis-3-Hexenyl tiglate	67883-79-8	When ready for use, the end-use concentration is not to exceed 100 ppm
3-Hexenyl formate	9/5/2315	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
Hexyl 2-methylbutanoate	10032-15-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Hexyl octanoate	1117-55-1	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
Hydroxycitronellal dimethyl acetal	141-92-4	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *
Hyssop oil (Hyssopus officinalis L.)	8006-83-5	When ready for use, the end-use concentration is not to exceed 100 ppm
* * *	* *	* *

* *	* *	* *
Isoamyl isovalerate	659-70-1	When ready for use, the end-use concentration is not to exceed 100 ppm
Isoamyl propionate	105-68-0	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Isobutyl angelate	7779-81-9	When ready for use, the end-use concentration is not to exceed 100 ppm
Isobutyl 2-butenate	589-66-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Isobutyl butyrate	539-90-2	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Isobutyraldehyde	78-84-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Isobutyric acid	79-31-2	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Isovaleric acid	503-74-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Jasmine lactone	25524-95-2	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
laevo-Bornyl acetate	5655-61-8	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Lauryl acetate	112-66-3	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Levulinic acid	123-76-2	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Linalool acetate	115-95-7	When ready for use, the end-use concentration is not to exceed 100 ppm
* *	* *	* *
Linalyl formate	115-99-1	When ready for use, the end-use concentration is not to exceed 100 ppm
Linalyl hexanoate	7779-23-9	When ready for use, the end-use concentration is not to exceed 100 ppm
Linalyl isobutyrate	78-35-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Linalyl isovalerate	1118-27-0	When ready for use, the end-use concentration is not to exceed 100 ppm
Linalyl propionate	144-39-8	When ready for use, the end-use concentration is not to exceed 100 ppm
Linoleic acid, methyl ester	112-63-0	When ready for use, the end-use concentration is not to exceed 100 ppm

	* * * *	
Lovage oil (Levisticum officinale Koch)	8016-31-7	When ready for use, the end-use concentration is not to exceed 100 ppm
	* * * *	
p-Mentha-1,8-dien-7-ol	536-59-4	When ready for use, the end-use concentration is not to exceed 100 ppm
p-Mentha-1,8-dien-7-yl acetate	15111-96-3	When ready for use, the end-use concentration is not to exceed 100 ppm
	* * * *	
1H-3a,7-Methanoazulen-6-ol, octahydro-3,6,8,8-tetramethyl-, [3R-(3.α,3a.β,6.α,7.β,8α)]	77-53-2	When ready for use, the end-use concentration is not to exceed 100 ppm
	* * * *	
3-Methyl-2-buten-1-ol	556-82-1	When ready for use, the end-use concentration is not to exceed 100 ppm
2-Methyl butyl acetate	624-41-9	When ready for use, the end-use concentration is not to exceed 100 ppm
3-Methylbutyraldehyde	590-86-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Methyl butyrate	623-42-7	When ready for use, the end-use concentration is not to exceed 100 ppm
2-Methylbutyric acid	116-53-0	When ready for use, the end-use concentration is not to exceed 100 ppm
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3-Methylcrotonic acid	541-47-9	When ready for use, the end-use concentration is not to exceed 100 ppm
Methyl 3,7-dimethyl-6-octenoate	2270-60-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Methyl hexanoate	106-70-7	When ready for use, the end-use concentration is not to exceed 100 ppm
Methyl linolenate	301-00-8	When ready for use, the end-use concentration is not to exceed 100 ppm
Methyl 2-methylbutyrate	868-57-5	When ready for use, the end-use concentration is not to exceed 100 ppm
Methyl 3-nonenoate	13481-87-3	When ready for use, the end-use concentration is not to exceed 100 ppm
2-Methyloctanal	7786-29-0	When ready for use, the end-use concentration is not to exceed 100 ppm
Methyl octanoate	111-11-5	When ready for use, the end-use concentration is not to exceed 100 ppm
2-Methylpent-2-en-1-oic acid	3142-72-1	When ready for use, the end-use concentration is not to exceed 100 ppm
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Methyl tetradecanoate	124-10-7	When ready for use, the end-use concentration is not to exceed 100 ppm
2-Methyl-trans-2-butenic acid	80-59-1	When ready for use, the end-use concentration is not to exceed 100 ppm
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Methyl undec-10-enoate	111-81-9	When ready for use, the end-use concentration is not to exceed 100 ppm
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Musk ambrette	123-69-3	When ready for use, the end-use concentration is not to exceed 100 ppm
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Nerolidiol	142-50-7	When ready for use, the end-use concentration is not to exceed 100 ppm
Neryl formate	2142-94-1	When ready for use, the end-use concentration is not to exceed 100 ppm
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2,6-Nonadien-1-ol	7786-44-9	When ready for use, the end-use concentration is not to exceed 100 ppm
2,6-Nonadienal diethyl acetal	67674-36-6	When ready for use, the end-use concentration is not to exceed 100 ppm
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1,3-Nonanediol acetate (mixed esters)	1322-17-4	When ready for use, the end-use concentration is not to exceed 100 ppm
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2-Nonenal	2463-53-8	When ready for use, the end-use concentration is not to exceed 100 ppm
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Nonyl acetate	143-13-5	When ready for use, the end-use concentration is not to exceed 100 ppm
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Octadecanoic acid	57-11-4	When ready for use, the end-use concentration is not to exceed 100 ppm
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δ-Octalactone	698-76-0	When ready for use, the end-use concentration is not to exceed 100 ppm
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2,5,7-Octatrien-1-ol, 2,6-dimethyl0, 1-acetate	197098-61-6	When ready for use, the end-use concentration is not to exceed 100 ppm
5-Octen-1-ol, (5Z)-	64275-73-6	When ready for use, the end-use concentration is not to exceed 100 ppm
Oil of citronella	8000-29-1	When ready for use, the end-use concentration is not to exceed 100 ppm
Oils, geranium	8000-46-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Oils, lavender	8000-28-0	When ready for use, the end-use concentration is not to exceed 100 ppm
Oils, lemon, terpene-free	68648-39-5	When ready for use, the end-use concentration is not to exceed 100 ppm
Oils, palmarosa	8014-19-5	When ready for use, the end-use concentration is not to exceed 100 ppm
Oleic acid	112-80-1	When ready for use, the end-use concentration is not to exceed 100 ppm
Oleic acid, ethyl ester	111-62-6	When ready for use, the end-use concentration is not to exceed 100 ppm

Oleyl alcohol	143-28-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Orange flower water absolute	8030-28-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Oxacycloheptadec-10-ene-2-one	28645-51-4	When ready for use, the end-use concentration is not to exceed 100 ppm
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1-pentanol	71-41-0	When ready for use, the end-use concentration is not to exceed 100 ppm
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Petitgrain Paraguay oil	8014-17-3	When ready for use, the end-use concentration is not to exceed 100 ppm
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Propanoic acid	79-09-4	When ready for use, the end-use concentration is not to exceed 100 ppm
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* *	* *	* *
Pyruvic acid	127-17-3	When ready for use, the end-use concentration is not to exceed 100 ppm
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Sandalwood yellow oil (Santalum album L.)	8006-87-9	When ready for use, the end-use concentration is not to exceed 100 ppm
Santalol	11031-45-1	When ready for use, the end-use concentration is not to exceed 100 ppm
cis- α -Santalol	115-71-9	When ready for use, the end-use concentration is not to exceed 100 ppm
cis- β -Santalol	77-42-9	When ready for use, the end-use concentration is not to exceed 100 ppm
Sclareol	515-03-7	When ready for use, the end-use concentration is not to exceed 100 ppm
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Spike lavender oil (Lavandula spp.)	8016-78-2	When ready for use, the end-use concentration is not to exceed 100 ppm
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Tartaric acid	87-69-4	When ready for use, the end-use concentration is not to exceed 100 ppm
DL-Tartaric acid	133-37-9	When ready for use, the end-use concentration is not to exceed 100 ppm
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α -Terpinyl propionate	80-27-3	When ready for use, the end-use concentration is not to exceed 100 ppm
Tetradecanoic acid, ethyl ester	124-06-1	When ready for use, the end-use concentration is not to exceed 100 ppm
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Tetrahydrogeranial	5988-91-0	When ready for use, the end-use concentration is not to exceed 100 ppm
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2,6,6-Trimethyl-1-cyclohexen-1-acetaldehyde	472-66-2	When ready for use, the end-use concentration is not to exceed 100 ppm

2,6,6-Trimethyl-1&2-cyclohexen-1-carboxaldehyde	432-25-7	When ready for use, the end-use concentration is not to exceed 100 ppm
p- α,α -Trimethylbenzyl alcohol	1197-01-9	When ready for use, the end-use concentration is not to exceed 100 ppm
9-Undecenal	143-14-6	When ready for use, the end-use concentration is not to exceed 100 ppm
10-Undecenal	112-45-8	When ready for use, the end-use concentration is not to exceed 100 ppm
10-Undecenoic acid	112-38-9	When ready for use, the end-use concentration is not to exceed 100 ppm
10-Undecenoic acid, ethyl ester	692-86-4	When ready for use, the end-use concentration is not to exceed 100 ppm
γ -Valerolactone	108-29-2	When ready for use, the end-use concentration is not to exceed 100 ppm
Violet leaves absolute (Viola odorata L.)	90147-36-7	When ready for use, the end-use concentration is not to exceed 100 ppm

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